

# **Pawn Structure:**

## **Introduction:**

This section consists of two very different parts. Here's an overview of both:

### **Part 1: White's Large Pawn Centre.**

In the opening and early middlegame stages of the game it is white who generally controls how important the pawn structure will be (e.g. whether they choose active piece play or a large pawn centre – see opening principles) and black who has to react appropriately (often in a forced and constrained manner).

Because it would be an impossible task to analyse every structure which could occur during the early stages of the game the focus here will be the situation where white creates a large pawn centre (pawns on e4 and d4), along with the different ways for black to respond to white's ideas and how they change the resulting nature of the game.

This set-up covers many opening systems and is a natural and common way for white to play. I chose it both because of this and because the plans and ideas are often based on principles, which can be studied, rather than calculation.

### **Part 2: General Pawn Play.**

The question addressed here is: when the opening and early middlegame is over how does pawn structure affect the play? While it's impossible to look at all the different middlegame plans and how the pawn structure affects the play, as it would be impossible to look at/find them all, I'll try to show how different aspects of the pawn structure can affect the subsequent plans and the nature of play for both sides.

The topics looked at here consist of: pawns on open files, pawn majorities, central pawns vs. flank pawns, isolated pawns and passed pawns.

## **PART 1:**

### **Defending b5 (or b4):**

Often the first decision relating to pawn structure each side has to make is based upon the b5 square. In countless opening lines black has to be prepared to defend against the development of white's b1 knight to a3 or c3 (or the g1 knight manoeuvre g1-f3-d4) with one of either ...b5, ...a6 or ...c6 (to prevent Nb5) and white should be prepared for any of these moves.

Note that if white chooses to not to put such pressure on black's queenside then he should be prepared to meet the development of black's b8 knight to a6 or c6 (generally a6 as white has a stronger grip on the centre squares – see 'Central Pawn Play') as well as the usual natural development ideas.

### **c6:**

In my opinion this move is generally the weakest choice (if it was actually a choice, many lines, involving Nc3, force black to defend this way). I find it usually ranges on scale from undesired to catastrophic. The reasons for this are as follows:

- Despite protecting the b5 square Nb5 isn't really prevented. This can allow for positional sacrifices or (if black's isn't careful) a swift white victory. (The line

1.Nc3 Nf6 2.e4 c6 3.Nd5!? shows that the idea of such a positional sacrifice is the basis of an important opening variation).

- It can indirectly prevent black's central pawn play.
- Often black needs to waste another tempo (on a6 or b5) to protect the b5 square again due to threats on it.

The following lines demonstrate these points:

- 1) 1.e4 d5 2.Nc3 c6?? 3.Nb5! (a basic tactical idea) 3...cxb5 4.Bb5+ Nc6 5.d4 and black is being toasted alive.
- 2) 1.Nc3 Nf6 (black uses tactical means to avoid defending the b5 square) 2.e4 Ng4 3.f4 c6 4.h3 and now, although complex, the desirable central push 4...d5? is prevented as such an advance increases the Nb5 sacrifice's strength (also the other major central advance 4...e5? is weak due to the Nb5 sac, 5.Nb5! cxb5 6.Bb5 Nc6 7.c3! with weakness' on the a2-g8 diagonal)
- 3) 1.Nf3 f6 2.Nc3 Nh6 3.g4 c6 4.Nd4 b5! and having protected b5 again black is OK (ideally black would have preferred the moves b5 & d5 to b5 & c6 – see 'Opening Principles').

Although I have used some lines here where black had no choice about playing c6 he still suffered from the move's drawbacks. However it's important to note that when a choice is available it's usually better to avoid it.

Lines where white forces black to adopt this unfavourable pawn structure aren't uncommon (e.g. 1.Nf3 f6 2.Nd4 Nh6 3.Nf5 Nxf5 4.Nc3 {4.e4 d5 5.Nc3 b5! is less accurate, allowing black to generate a more desirable formation discussed below} 4...c6, and white has an edge due to more space/central control. Black sometimes even plays a later b5 to both remove any Nb5 sac and to allow for the ...e5 and ...d5 breaks) and generally more critical than if black is given the choice (this idea is discussed further in Opening Principles).

#### a6:

Although I wouldn't label this move as being altogether weak it seems passive to me in most situations. Although Nb5 sacrifices wouldn't be common (as Nb5 axb5 Bb5+ would usually be answered simply by c6) they aren't prevented. For example if white achieved knights on d4 and a3/c3 black may have to waste another tempo safeguarding the b5 square.

e.g. 1.Nf3 f6 2.Nd4 Nh6 3.h3 a6?! (3...b5! 4.Nc3 d5 is fine for black, giving a superior pawn structure to the main variation) 4.Nc3 (or 4.Na3) 4...c6

I can't find any systems where white forces black into adopting an a6 system rather than a favourable b5 system, discussed below (the reason c6 systems are sometimes forced is that the move is sometimes needed to defend b5 and d5 simultaneously in some Nc3 systems).

#### b5:

If given a choice I feel black should go with this option. Although it's not always a nice rosy game for black hardly any of white's lines that allow b5, after Na3, Nc3 or Nf3-d4, can be regarded as the most critical lines from a theoretical viewpoint. The move's general good and bad points can be summarised as follows:

Positives	Negatives
1) Any Nb5 ideas are removed completely while the black pawn remains on b5.	1) The b8 knight (and so usually the a8 rook) finds it hard to get developed (note that this is also true after c6 or a6).

2) The c8-bishop can now develop on the h1-a8 diagonal via b7, often to good effect.	2) In Nc3 systems where black has also played ...d5, white has the option of exd5 threatening Nd5 as well as d5 (note this is also true after a6 or c6, and in fact is harder to meet in those cases).
3) Black now has a foothold on the queenside, where he can later attempt a queenside attack (usually starting with ...c5).	3) White can try to undermine the important b5 pawn with a4 (if white has used a Nc3 system)
4) Apart from preventing Nb5 the mobility of any a3/c3 knight is reduced (as it's less likely to move to either a4 or c4)	4) In Na3 systems white can play a c4 advance, without fear of Bb4+ threats, due to the attack on b5. This move can aim to grab space and cripple black's queenside play with c5 or undermine the important b5 and d5 squares.

Although in some cases the negative point 1 can be annoying, and is too general to give a 'solution' against, 2 & 3 are not big problems. (4 is often a valid plan for white and how black responds would depend more on piece placement than pawn structures).

Point 2: A well timed ...Bd6, while preventing white tactics, mainly Qd1-h5-h6, usually prevents white's idea from being too strong.  
e.g. 1.Nh3 f6 2.e4 d5 3.Nc3 b5! 4.d4 Nh6 5.Bxh6 e5! (5...g6?! 6.exd5 e6 7.d5?! Bd6! is also unclear, but 7.Nf4! {siggemannen} 7...c6 trades a useful white move for an unwanted black one, leaving white better) 6.exd5 Bg4! 7.f3 Bd6! with an unclear position, although the tactics seem to hold together for black.  
Or 1.Nf3 f6 2.Nd4 Nh6 3.Nf5 Nxf5 4.e4 d5 5.Nc3 b5! 6.d4 e5 (without the white kingside knight 6...g6 seems fine here) with similar play.

Point 3: A favourite idea of the pulsar programme (an atomic playing computer). Fortunately it can usually be countered using a pin involving the light squared bishops.  
e.g. 1.Nf3 f6 2.Nd4 Nh6 3.Nf5 Nxf5 4.e4 d5 5.Nc3 b5! 6.a4 (white aims to play axb5 when Nb5 is an annoying threat again) 6...e5! (white was hoping for something like the grovelling 6...a6? 7.axb5 c6? {7...a5!}) when 8.Nb5! would still be strong, however any natural move {such as 6...g6} would be fine) 7.axb5 a5! 8.Nb5 Ba6 and after a future ...Bxb5 black is fine.

An example of how this idea has shaped atomic opening theory is given in the line: 1.Nf3 f6 2.Nd4 Nh6 3.e3 Ng4 4.f4. For a long time 4...c6 was the only move played here, when white can choose between 5.Nb5, 5.Nc3 and 5.Nf5. For a long while I simply copied this move but after learning a little about the advantages/disadvantages of both ...c6 and ...b5 I began to play 4...b5. More than simply being more logical, due to my comparative analysis above, and preventing 5.Nb5 it also improves black's chances in the 5.Nc3 and 5.Nf5 variations. Nowadays 4...b5 seems to be the universal choice but now I wonder how much of this is simple copying?

**Na3/Nc3 b5 or Na6/(Nc6) b4?**

From the information given above you can see that if allowed to respond with b5 against the knight attacks Na3, Nc3 or Nf3-d4 black can generally achieve an OK game. Therefore a question that white should ask themselves before attacking the b5 square with their knight is whether a Na3/Nc3/Nd4 b5 move is actually at all beneficial. If not then are they prepared to answer ...Na6 with b4, reversing the general plans surrounding the pawn formation (the extra tempo surely won't have hurt the position)? Personally I think that there's something to be said for this plan, at any rate it deserves more attention than it currently receives.

Maciejg – Tipau (FICS, 3 3, unrated, 18/11/05)

1.d4 d5 2.e4 Nh6 3.h3 (of course 3.g4?? isn't as effective as the b4 idea due to future Qh4 threats) 3...Na6! (3...e5 was another critical option and 3...g6 a slower alternative) 4.b4! e5 (now white has achieved a typical 'black position' with a b5 structure reversed, however the extra tempo can come in handy) 5.c4! (beginning the queen-side attack) 5...c5! (putting up a fight, the 'sensible' 5...g6?! allows white more of a free hand on the queenside) and now white could have kept the game tense in a number of ways (such as 6.Be2 or 6.cxd5!? with unclear prospects).

Although white didn't actually achieve a better position this way than in lines where he forces ...b5 it wasn't an easier ride for black either. What side of such structures a player prefers is perhaps taste, as either way the positions usually seem dynamically equal. I think the main reason that the structure occurs mostly with black playing ...b5 is that white players generally feel the need to force the play more and act on this, rather than believing that the move actually helps their game.

**Defending g5. Is ...f6 a useful move or a weakness? Brief comparison of ...f6 and ...h6.**

I remember quite a long time ago while playing Moltenthinker, a strong atomic player, some fast atomic games at the ICC he surprised me somewhat by opening with 1.Nf3 f6 2.Ng1!?!?. At the time he explained that he believed ...f6 was a weakening move to have played, and so on that logic he was playing a sort of slightly improved black I wasn't really sure that his reasoning was correct, (In fact 2...Nc6 looks good to me now I look) but didn't argue back (having lost the game!). Although you may think ...f6 isn't really an optional move for black in a lot of openings (you either play it or lose) and so it isn't really worth discussing, ask yourself which of the following lines do you think is white's best and why?

- 1) 1.e4 d5 2.d4 Nh6 3.Bxh6 or 1.e4 d5 2.d4 Nh6 3.Bg5 f6 4.Bxh6 and which of these is black's best?
- 2) 1.e4 d5 2.Nh3 f6 or 1.e4 d5 2.Nh3 h6

Coming back to these again soon I think it might be useful to look at the positives and negative of the ...f6 move:

Positives	Negatives
1) Tactics along the a2-g8 diagonal aren't as dangerous, as f7 is removed from immediate attack. For example, grenv – tipau, brainking.com, 1.e4 d5 2.d4 Nh6 3.h3 Na6 4.a3 e5 5.exd5 f6!, a strong move avoiding white's unpleasant ideas	1) The h4-d8 diagonal is closed, preventing many of the black queen's tactics. For example, compare 1.Nh3 f6 2.Nc3 (when black is encountering difficulties) with 1.Nh3 h6 2.Nc3 e6 (when the open h4-d8 diagonal allows black various

involving Bc4 and Bg5.	queen tactics, giving an OK game).
2) Ng5 attacks aren't as dangerous for black, making Nh6-g4 quite unpleasant in some cases. For example, the line 1.Nf3 f6 2.Nc3 Nh6! is based on this.	2) The f6 square is removed from the g8-knight (although h6, creating counter-play with the threat of Ng4, is generally a better square for it anyway {see 'Opening Principles'} especially in the cases described in this section when white grabs a large centre {see 'Central Pawn Play' below})

Going back to the questions from earlier:

Question 1:

I think 1.e4 d5 2.d4 Nh6 3.Bxh6 is the better bet between the first two lines. Not because I think having f6 is a vast improvement to black's position but more because a later Nh3 is more likely to draw out f6 (or h6) anyway with a gain of tempo (if f6 has already been played 'for free' black could ignore the move).

Question 2:

I would prefer 2...f6, although this is perhaps simply personal taste. Having played the black side of similar systems many times I feel more comfortable with it than with ...h6, having only begun playing some ...h6 systems recently. Although both are playable black tend to have more problems avoiding becoming cramped in ...h6 lines, mainly because the g8-knight is harder to develop.

(2...Bxh3 also seems an option {note that this is better than 2...Bg4 3.f3 Bxh3 for similar reasons to those discussed above with 1.e4 d5 2.d4 Nh6 3.Bxh6} although with the removal of the light squared bishop black might be wise to prefer a later ...e6 over ...e5 – see 'Central Pawn Play').

A relatively new line of theory is 1.Nc3 Nf6 2.f3! (it may be interesting for you to look with the colours reversed: 1...Nc6 2.Nf3 f6!?) where white can make a serious attempt at an advantage with this small push of the f-pawn. This is mainly due to the combined threats of both the typical Nh3-g5 attack and Nc3-b5/d5. Although black seems OK currently it's interesting that this move has turned up here.

### **Central Pawn Play:**

How black plays the central pawns depends on different factors.

- Current piece placement
- Bishop/Queen situation
- Immediate tactical factors

This is roughly the order on which I would check a position before making a central advance. For example, if you have a knight wandering the centre and your light squared bishop is gone, while the opponents is very much alive, there's generally little point in analysing the consequences of breaking open the centre with say ...e7-e5.

### **Current Piece Placement:**

When trying for aggressive central pawn play the placement of your forces, especially minor pieces, can be a hindrance. This is generally true when they are more centrally placed, as they can get in the way of potential explosions and tactics. This is one of the reasons that knights are usually far better placed at the edge of the board during

the early stages of the game (on a6 or h6) when white chooses to play with a large pawn centre – see ‘Opening Principles’.

Current pawn structure/placement is also a factor. The structures where black is holding the b5 square, against a knight, with ...c6 are less likely to support either ...d5 or ...e5 due to tactical Nb5 ideas, especially if white still has the light squared bishop. Also if black has played f6 (after g5 had been attacked by a knight) Ng5 tactics are often strong against e5 advances, if white still has a dark squared bishop.

#### Bishop and Queen Situation:

When playing either of the 2 main central advances (e5 and d5) black weakens important diagonals (the h3-c8 and a2-g8 diagonals with e5 and a3-f8 and h2-b8 diagonal with d5) and if allowed white can take advantage of this using the bishops or queen, especially if black has already lost the bishop that could usually act as a defender of the diagonal in question. While this factor can be seen as an extension of the next one, as you are checking tactics along these diagonals, it is worth checking this first as it is the most common tactical idea for white against such advances.

#### Immediate Tactical Factors:

If piece placement is not a problem and there’s no immediate disaster on the potentially opened diagonals then the move is worth calculating. If it doesn’t lose or give a terrible position then the move can be seriously considered.

Depending on how black evaluates these factors he should aim to reach one of the following central set-ups:

#### ‘Fighting Centre’:

e4 & d4 vs. e5 & d5

Generally the centre that black aims for. If such a situation can be safely reached black has achieved an equal share of central control. I would say that generally after achieving such a set-up black has level chances, although such positions can often quickly become complex, unclear and difficult to assess.

e.g. 1.e4 d5 2.d4 e5 (although it’s probably better to play 2...Nh6 {and then perhaps even 3...Na6 before 4...e5, although this depends on taste – whether to play Na6 in such positions is discussed under ‘Na3/Nc3 b5 or Na6/(Nc6) b4?’} before 3...e5)

#### ‘Solid Centre’:

e4 & d4 vs. e6 & d5 (or e3 & d4 vs. e5 & d5)

Often used as a step on the way to achieving a ‘fighting centre’, described above.

However it can be used separately if black is unhappy with potentially opening the light squared diagonals. Black must be careful not to allow white to gain too strong a grip on the position after a future e5, although usually black’s resources are fine even if white does get in this advance.

e.g. 1.e4 d5 2.e5!? e6 3.Nf3 f6 4.d4 (and now despite forcing black to adopt the ‘Solid Centre’, while having a pawn at e5, white seems unable to demonstrate any superiority from this position. Typical counter-play for such structures can occur after Nh6 (Bxh6), g6, Bh6, 0-0, fxe5 etc.

#### ‘Small Centre’:

e4 & d4 vs. e7 & d6/e6 & d7 (or e2 & d3/e3 & d2 vs. e5 & d5)

Usually used because the two ideas above have been weakened, either because of a Nb5 positional sacrifice or the possibility of one. Therefore this type of centre occurs in ...c6 structures. The general ideas involve developing/swapping the bishops (although the c8 bishop can be problematic in a e6 & d7 set-up. The f8 bishop is generally developed with g6 and Bh6, although occasionally via Bb4 in e6 & d7 structures) castling as quickly as possible before attempting to generate counter-play. If white is not careful this plan can be quite strong.

e.g. 1.Nc3 Nf6 2.e4 c6 3.Nd5 cxd5 4.Bb5 Nc6 5.f3 g6 6.d4 Bh6 7.Bxh6 (7.Bg5 removes the g5 square from the g1 knight and invites possibilities of a future Ng4 after black castles) 7...d6 (7...0-0? 8.Nh3) 8.Nh3 Bxh3 and now either 9.e5 – discussed under ‘Dynamic Play’ – or 9.c3 0-0 when black is better.

The other centres black can create against e4 & d4 (e5 & d6, e6 & d6 and the ‘Unmoved centre’ e7 & d7) are generally less advisable, although of course there are exceptions (e5 & d6 tend to weaken the a2-g8 diagonal too much in many lines and e7 & d7 usually cramps development).

### **Analysis of an Opening’s Pawn Structure:**

There are many opening’s I could analyse where white creates a large pawn centre with e4 & d4 and I’ve chosen quite a common one that I feel shows all the ideas I’ve looked at.

1.Nf3 f6 2.Nd4 Nh6 3.Nf5 Nxf5

This opening seems to be considered quite boring by most players however I don’t really agree with that. It more depends on how both sides play it, when played well the line generally creates standard Nb5 sacrifice positions which I find quite interesting.

Here white has 3 main ways of playing the position, while constructing a large pawn centre (e3 lines are sometimes played, both here and hereafter, but don’t create such a centre, and gives black an easy game in any case). If white doesn’t go for the most critical lines then black can easily achieve equality or unclear prospects.

- A. 4.Na3 b5! 5.e4 (or 5.d4 d5 6.e4) 5...d5 6.e4 e5! (black has successfully created a ‘Fighting Centre’ and a ...b5 structure with no difficulty at all. Black has equalised, a move like 6...g6 may also be fine for black but it allows white more options to fight for an edge)
- B. 4.e4 d5 5.d4 (5.Nc3 b5! 6.d4 e5!; 5.Na3 b5! Transposes to line A) 5...e5! (and again black has equalised. A future Na3 should be answered with ...b5!)
- C. 4.Nc3! (the best move. White forces black to adopt a ...c6 structure) 4...c6

C1) 5.d4 (5.Ne4?! is strangely common. White doesn’t achieve a big centre but doesn’t generate strong piece play either e.g.: 5...e6 6.e3 g6 7.b3 b5 8.Nd6 Bxd6 =) A less common alternative to 5.e4, although of similar strength it allows black more flexibility. White avoids the 5.e4 Qb6 line but allows black to transpose to the other lines, discussed below, or play a different option (5...b5, 5...d5 or 5...d6).

C2) 5.e4!

Now black has a long list of possible, ‘good looking’ moves. Some of these can be dismissed quite quickly others deserve a closer look:

- 5...e5?? 6.Qh5 g6 7.Qh3 1-0

- 5...b5?? 6.Nd5 cxd5 7.Qh5 1-0
- 5...d5?? 6.Nb5 +-
- 5...d6? 6.Nd5 cxd5 7.Qh5 g6 8.Qb5 Nc6 9.Qb6 +-

The 3 main moves I'll look at are 5...e6, 5...g6 and 5...h5 (5...Qb6 6.d4 Qxb2 also is interesting, but I'll look at this type of queen vs. pieces position in 'Material Imbalances').

C21) 5...e6

C211) 6.Nb5 cxb5

C2111) 7.Qh5 (usually considered the refutation of black's 5<sup>th</sup>) 7...g6 8.Qb5 Nc6 9.Qb6 Kf7! 10.Qc7 Bb4 11.c3 Qf8! and white has no way to get any advantage {tipau}.

C2112) 7.Bb5 Nc6 8.d4 (threatening both 9.Bh6 and 9.Qh5 g6 10.Qd5 d6 11.Qxd6) 8...h5 (8...g6 9.g4! is a nice idea, aiming to cramp black's position +=) with a typical position from an Nb5 positional sacrifice – see 'Opening Principles'. =∞.

C212) 6.d4 (this will probably turn out similar to 6.Nb5 lines, as white has nothing better) 6...h5 (again white had a Bh6 threat, 6...g6 7.Nb5 cxb5 8.Bb5 Nc6 9.g4! +=) 7.Nb5 (7.d5 Bb4 {7...d6 8.Nb5 cxb5 9.Bb5 Nc6 10.e5 looks awful for black} will be fine for black after a quick ...d6 {note that if white plays 8.d6 black has several decent options due to piece play e.g. Nb8-a6-c5 or c6-c5 followed by Nb8-c6, while if white plays Be3 to win material the g1-a7 diagonal will become susceptible to Qb6 attacks}) 7...cxb5 8.Bb5 with the same position from C2112. =∞.

C22) 5...g6

C221) 6.g4!?

C222) 6.Nd5 cxd5 7.Bb5 Nc6 8.d4 =∞

C223) 6.d4 and now either 6...e6, 6...d6 or 6...Bh6 7.f4! {7.Bg5 b5!; 7.Bxh6 b5!} 7...d5 8.g4 b5 9.e4 ∞ (but not 6...b5? 7.Bh6 Bxh6 8.Qg4 e6 9.Qf4 +-)

C23) 5...h5 (although this slows down the development of black's dark squared bishop it helps to prevent the annoying g4 move in some lines)

C231) 6.d4 b5! =

C232) 6.Nd5! cxd5 7.Bb5 Nc6 8.d4 =∞

## **PART 2: General Pawn Play.**

### **Pawns on Open Files:**

- Pawns on open files (not passed and not only rook pawns) ()

### **Pawn Majorities:**

- Pawn majorities – how affect the game before an endgame is reached?  
Queenside majority vs. kingside majority. Which majority is better before the endgame? ()

### **Central Pawns vs. Flank Pawns:**



- Central pawns vs. Flank pawns, Central pawns more important? ()

**Isolated and Passed Pawns:**

- Isolated pawns and Passed pawns (Isolated good, as they help attacking game?  
Are passed pawn always good, or maybe depends on where they are blocked?  
(e.g. if blocked far up the board maybe they are a 'weak passed pawn'?)( )